

WELCOME TO

MODULE FOUR

# Hormones & Metabolism



# Welcome TO MODULE 4!



Hormones most literally control our lives – no matter our gender. They're important, little chemical messengers, tasked with running practically every bodily function.

However, sometimes their simple task of communicating the proper information to our body gets disrupted – leading to hormonal imbalances.

While hormonal imbalances are rather common, they're certainly not normal.

These imbalances are important warning signs that should not be ignored.

So in this module, we're going to talk about some important hormones and their effects on autoimmune disease, as well as overall gut health.

## DO I REALLY NEED TO CHECK MY HORMONES?


Before we get into the conversation about specific hormones, I want to address why it's so important to routinely get your hormone levels checked.

So the question is: **why are hormone check-ups necessary?**

Well, as I mentioned earlier, hormonal imbalances are warning signs that something is amiss in our bodies. These imbalances can cause anything from fatigue and anxiety to more severe issues like organ failure and depression.

When they're out of the normal range, they aren't doing their job at regulating the body's processes. This can contribute to more chronic diseases - which we definitely want to avoid!





Unfortunately, it's so common to not even realize that our health issues are being influenced by hormonal changes or imbalances because we simply don't recognize if our symptoms are normal or abnormal.

So how do we tune into those warning signs while also taking care of ourselves well enough to prevent further hormonal imbalance?

A key component is self-monitoring our symptoms. Being able to recognize a pattern will make it easier to notice that you're experiencing certain symptoms more frequently than before.

This pattern be an indicator to make an appointment with your healthcare provider for a full hormonal assessment.



## SO WHAT SHOULD I LOOK OUT FOR?

Your body makes over 50 different hormones – all of which contribute to important bodily functions. This means that you could experience several different symptoms depending on which hormonal imbalance you have.

Here are common signs of hormonal imbalance you can begin to look out for:

### Weight Gain

If you haven't changed your diet or exercise routine but seem to be gaining weight unintentionally, you might have a hormonal imbalance. This can present itself as periodic, continuous, or rapid, weight gain, depending on the cause. However, periodic is most commonly associated with hormonal changes, which cause regular fluctuations in weight.

### Fatigue

If you're feeling tired or lethargic all the time, you may be experiencing chronic fatigue. When you're fatigued, you may have no motivation or energy to do anything. This condition can range in severity.

### Irregular Menstrual Cycle

For individuals that menstruate, you can typically expect a period every 24 to 38 days that generally lasts between 2 and 8 days. Although everyone is different, your period will likely fit into these parameters if your hormones are in balance. However, if they are unpredictable, something may be off.





## Sleep Problems

Our sleep is regulated by our circadian rhythm. This is our 24-hour internal clock that controls our cognition, metabolism, sleep-wake cycle, and many other functions. If the hormones in charge of our sleep aren't being produced adequately, you might experience trouble with your sleep patterns.

## Low Libido

The hormones that control your libido, or sex drive, differ depending on if you are a man or a woman. However, no matter what you identify as, if your estrogen, progesterone, and testosterone aren't being produced normally, your libido will likely suffer.

## Skin Problems

Acne, sometimes referred to as hormonal acne, occurs due to uncontrolled hormones that change our skin cell activity. It presents itself as any combination of whiteheads, blackheads, pustules, cysts, and nodules. Acne can be incredibly painful and is often related to hormonal changes like most go through in puberty. Rising testosterone levels and falling estrogen levels are generally the culprits for acne that develops or worsens suddenly.



## Infertility

Infertility is described as the inability to conceive a child naturally after a year of trying or 6 months if you're over 35 years old. The inability to carry a pregnancy to term may also be considered infertility. Both men and women are equally likely to experience fertility problems, some of which are caused by hormonal imbalances. For men, this could mean low testosterone production, and for women, it may mean polycystic ovarian syndrome or a different hormonal imbalance.

## Mental Health Problems

Your hormones control your mood and mindset more than you may be aware of. If you're feeling low or experiencing fluctuating moods, it's always best to discuss it with a physician or therapist experienced in the field.

## Headaches

The female hormone estrogen has been linked to headaches, especially migraine headaches. It's responsible for controlling the chemicals in our brains that affect our sensation of pain. So if those levels drop, it can trigger headaches.

*Additional Symptoms:* Constipation, Excessive Sweating, Hair Loss



# THE CONNECTION BETWEEN HORMONES & AUTOIMMUNE DISEASE

Not only can imbalances in your hormones contribute to the onset of autoimmune diseases, but autoimmune diseases in and of themselves can cause hormone insufficiency and imbalance.

What this means is the direct connection between hormones and autoimmune diseases is bidirectional.

Even when you have a slight imbalance, it can cause a cascade of hormonal changes (as we just touched upon).

These imbalances can lead to inflammation, cell dysfunction, and tissue damage, all of which contribute to autoimmune conditions.

The six hormonal imbalances most implicated in the development and perpetuation of autoimmune conditions include the following:

## 1- CORTISOL

We learned a little about cortisol in the module on stress, and we know that your body makes cortisol in response to stress. It also helps to lower inflammation in your body.

Additionally, we know that most of us have way too much chronic stress, and our cortisol is off as a result.

High cortisol levels cause a lot of trouble over time, depleting brain chemicals like serotonin, interfering with sleep, and causing your body and cells to become desensitized.

As a result, cortisol ceases to lessen that inflammatory response, and inflammation begins to rise throughout our bodies.

Over time, this cortisol resistance leads to developing a dysfunctional stress response and catabolic state - creating a risk factor for developing autoimmune disease.

**Symptoms:** feeling tired but wired, anxiety, heart palpitations, trouble sleeping, salt and sugar cravings, dizziness upon standing, and low blood pressure.



## 2- ESTROGEN:

We're probably all familiar with estrogen and its role in the female reproductive system.

However, estrogen is actually produced by both women and men.

It helps to maintain the health of your heart, bones, brain and skin, while also contributing to mood, sleep, cortisol, and thyroid regulation.

Low levels can impair memory, cause temperature regulation issues like hot flashes, and lower bone density.

On the other hand, estrogen dominance (too much estrogen in relation to progesterone in women and too much estrogen to testosterone in men) tends to boost the immune system too far - leading to the immune system mistakenly attacking its own cells.

**Symptoms in women:** menstruation with heavy bleeding and severe cramps, increased PMS symptoms, weight gain in hips and butt, ovarian cysts, endometriosis, fibroids, migraines, miscarriages, rosacea, insomnia, brain fog, anxiety or depression, decreased libido, and gallbladder issues.

**Symptoms in men:** fatigue, loss of muscle mass, urinary tract issues, reduced libido, erectile dysfunction, anxiety or depression, increased belly fat, and enlarged breasts.



### 3- INSULIN

Insulin allows the cells in the muscles, fat, and liver to absorb glucose that is in the blood. Glucose serves as energy to these cells, or it can be converted into fat when needed.

However, too much glucose too often can cause our cells to store that fat, especially in the belly, which can lead to type 2 diabetes.

So the more sugar you consume, the more insulin is created. Eventually, the cells in your body hit a max capacity and stop responding to insulin - leading to a dangerous increase in blood sugar levels.

**Symptoms:** fatigue (especially after eating), cravings for sweets, weight gain in the abdomen, weight loss resistance, frequent urination, aches and pains, and dark patches on the skin.



## 4- THYROID

The thyroid is the master metabolic regulator of the body. It's responsible for managing your breathing, body temperature, hair growth, heart rate, energy level, and weight.

So when thyroid hormone levels are too high or too low, the body can't function properly.

This dysfunction leads to the development of autoimmune diseases such as hypothyroidism - where the immune system inadvertently attacks thyroid tissue.

**Symptoms:** weight gain or weight loss resistance, hair loss (including the outer third of your eyebrows), poor concentration, brain fog, constipation, tiredness upon waking, cold intolerance, depression or anxiety, joint aches and pains, and dry skin, hair, or nails.



## 5- VITAMIN D

Vitamin D is actually considered a hormone, and along with the thyroid hormone, is one of the two hormones every cell in your body needs.

It helps regulate hundreds of different pathways throughout the body and is vital for insulin regulation, immune function, and inflammation reduction.

It plays a key role in promoting regulatory T cells, which decide whether to dampen or promote inflammation in the body.

Studies show more than 90 percent of those with autoimmunity have a genetic defect that promotes vitamin D deficiency.

**Symptoms:** fatigue, aches and pains, weakness, frequent infections, osteopenia, osteoporosis, bone pain, and bone fractures.



## 6- DHEA (DEHYDROEPIANDROSTERONE)

DHEA is fundamental for hormonal homeostasis, supporting cognitive function, immunity, and bone, skin, and heart health.

It's produced by the adrenal glands, the reproductive organs, and the brain, and is a natural steroid.

DHEA is used by the body to make the male and female hormones, testosterone, and estrogen.

It naturally begins to decline in your twenties, but chronic stress also contributes to the loss of this foundational hormone.

When stress is high, your adrenals work on over time to make cortisol. When they become depleted, DHEA also goes down, compromising the body's immune system and accelerating the aging process.

**Symptoms:** profound fatigue, decreased stamina and alertness, aches, weakness, malaise or depression, reduced muscle mass and bone density, thin skin, low libido, frequent infections, dry skin and eyes, poor memory, and weight loss resistance.



# HOW DOES THIS AFFECT OUR GUT HEALTH?

There is a close relationship between the gut and the immune system. In fact, some scientists believe that gut health may play a role in the development of autoimmune diseases.

## **Gut Bacteria Imbalances**

The more good bacteria there are, the healthier we are. So, when the gut becomes imbalanced and has too many bad or harmful bacteria or an overgrowth of fungus - hormonal disturbances, inflammation, and other processes take place which can lead to serious disease.

## **Inflammation**

The activation of the immune system in the gastrointestinal tract can cause inflammation or damage to the lining of the intestines and other parts of the digestive system. This can be caused by lifestyle factors, medications, altered gut bacteria, a leaky gut, or genetics.

## **Leaky Gut**

When dealing with a leaky gut, pathogens, toxins, partially digested food, and bacteria are able to leak through the gaps between the cells and enter the body. When these substances leak through the barrier, immune cells identify them as a potential threat and initiate an immune response in order to protect the body.

This immune response creates inflammation. In some cases, this inflammation can become widespread throughout the body.





## STRATEGIES FOR BALANCING HORMONES

There is no one-size fits all answer in how to balance your hormones because it varies from person to person. The longer your hormone levels are out of balance, the more difficult it is to rebalance your hormones. Finding the root cause of your hormone imbalance is key. Make sure to consult with your trusted healthcare practitioner for more detailed and tailored strategies to help balance your hormones.

Here are some general tips you can try out in the meantime:





## 1. ANTI-INFLAMMATORY DIET

Chronic inflammation can lead to a plethora of hormonal problems. You can combat inflammation by opting for a more anti-inflammatory diet, such as the Mediterranean diet. Avoiding inflammatory foods can help to restore your health and rebalance your hormones.

The following foods have been linked to chronic inflammation:

- Artificial colors, flavors, and sweeteners
- Dairy products
- Excess meat
- Food that you have an allergy, intolerance, or sensitivity to
- Fried foods
- Gluten
- Processed foods
- Refined oils
- Sugar
- Trans fats

Removing these foods from your diet and replacing them with healthy fats, lean proteins, and fresh fruits and vegetables can significantly help reduce inflammation naturally and potentially correct hormonal imbalances.



## 2. AVOID ENDOCRINE DISRUPTORS!

These are chemicals that are found in many different everyday products like pesticides, detergents, plastics, cosmetics, herbicides, fertilizers, antibacterial products, and naturally occurring phytoestrogens. Endocrine disruptors interfere with the body's ability to make and regulate the various hormones in the body.

By choosing organic foods, natural cosmetics and soaps, avoiding plastics, and limiting the use of chemical fertilizers, herbicides, and pesticides - you can help minimize your exposure to endocrine disruptors and work toward restoring your hormone health.

Here is a neat mobile app you can use to test out the everyday products you consume in your home. I highly recommend you take note of what products are actually doing more harm for you and your body: <https://yuka.io/en/>



### 3. BALANCING YOUR GLUCOSE LEVELS

Balanced blood glucose levels are essential for balanced hormones. Studies have shown that high glucose intake worsens your autoimmunity, making us more likely to experience insulin resistance. This means that after a high carbohydrate meal or sugar, you are more likely to have a crash in blood sugar which can lead to fatigue, shakiness, lightheadedness and anxiety.

Eating a well balanced meal that contains plenty of colourful vegetables, healthy fats, and good quality meat and fish, will help to improve blood sugar regulation. Additionally, Incorporating apple cider vinegar into your diet can help reduce sugar cravings and improve your levels.

Refined sugar can significantly increase insulin levels, glucose levels, and inflammation. Reducing your sugar intake can help normalize blood sugar levels and balance your hormones naturally. When you are craving sugar, enjoy some fresh fruit. This will relieve your sugar cravings without causing blood sugar spikes!



## 4. DETOXIFICATION

As we just briefly discussed under avoiding endocrine disruptors, the world is filled with toxic substances that can disrupt hormone production. A detoxification program helps to remove toxins from the body, increases the body's natural detoxification abilities, and improves the body's ability to make and use hormones.

An effective detoxification program involves:

- using natural cleaning products - as mentioned earlier
- replacing processed foods with whole foods
- replacing sugary drinks and alcoholic drinks with water
- increasing your blood flow - like during a workout or in a sauna - to help remove toxins from your body



## 5. IMPROVE GUT HEALTH WITH PROBIOTICS

When your gut is unhealthy, it can cause chronic inflammation and hormone disruptions. Gut health can impact estrogen regulation, serotonin production, reduced thyroid hormone creation, and insulin resistance.

Probiotics are healthy bacteria that can actually improve your production and regulation of key hormones like insulin, ghrelin, and leptin. They can also aid in repairing your gut lining, which in turn can balance your hormones.

When undigested food particles, like gluten, for example, leak through your gut into your bloodstream, it leads to disease-causing inflammation that impacts the entire body – especially glands like the thyroid which is very susceptible to heightened inflammation. Most people with leaky gut have an a deficiency of probiotics in their guts.

To consume more probiotics, you can both add fermented foods to your diet (such as yogurt, kefir, sauerkraut, etc.) and take probiotic capsule supplements.

## 6. EXERCISE

Exercise works in several different ways to help rebalance hormone levels.

1. It increases the production of dopamine in the brain, which can help reduce stress.
2. It also causes the body to release serotonin which can help improve sleep, digestion, and sexual health.
3. Testosterone levels and estrogen levels can also be increased with daily exercise.

Just remember:

**Go at your own pace, figure out what works for you.** Not everyone's experience of autoimmune disease symptoms is the same. Start slowly with your workouts and work your way up to more challenging ones.

**Have good support systems.** Talk to your healthcare providers about your plans to exercise and get their input. Make an appointment at your gym to have a fitness assessment with a personal trainer.

**Choose low-impact exercises.** Low-impact activities are easier on your joints, back and knees. Consider exercises like walking on the treadmill, yoga, Pilates, weight training, low-impact circuit training and swimming. Add in cardio and aerobics which fit your ability levels such as rowing, stationary bike or outdoor cycling, step climbing, elliptical and even dance.

**Keep a journal of your daily activities, including when your exercise, the activities you did, and what you ate.** If you find yourself overly exerted, you will probably see patterns start to emerge with when you have the most/ least amount of energy. Take these into consideration and adjust your routine accordingly.

**Conserve your "spoons".** If you have an active autoimmune disorder you only have so much energy to spend in one day, you need to budget your time and energy as if it were money. Don't over extend yourself or plan too many activities or appointments for one day. Prioritize self-care activities, like exercise and other things that make you feel good.



## 7. TRY SUPPLEMENTATION

Adaptogenic herbs and vitamin and mineral supplements can help the body cope with chronic stress, toxin exposure, and inflammation.

Low levels of B vitamins, vitamin d, iron, zinc, magnesium, and iodine can lead to a hormone imbalance.

Taking a vitamin and mineral supplement along with eating a healthy diet can help correct nutrient deficiencies and promote balanced hormones. Adaptogenic herbs also improve the body's stress response and help it better cope with stressful situations and chronic stress.

Some of the top adaptogenic herbs to talk with your healthcare professional about are American ginseng, Ashwagandha, Astragalus, Cordyceps, Holy Basil, Licorice root, and turmeric.



# Questions



## FOR REFLECTION:

How often do you get your hormone levels checked? How might you begin monitoring your symptoms to recognize when a hormonal imbalance starts to appear?

Choose at least two strategies to help balance your hormones. How might you begin to incorporate these strategy into your daily life this week?

What kind of endocrine disruptors do you unknowingly have in your house and/or use regularly? How might you begin finding alternatives for these products?

# Homework

## FOR THIS WEEK:



Begin to implement your hormone-balancing strategies into your daily life



Continue your journaling practice.



Now that we're 4 weeks into this program, let's check back in with the goals you set at the beginning of the program. Are you feeling on track with these? Where do you need more support?